

Data Link Workshop

What data link can we do in the near term with what we have?

- There is no FAA funded program for domestic data link.
- What is the value proposition for near term data link in the NAS?
- Need customer support to build the case.
- How do we synchronize timing of investment decisions?
- Never decided who would pay for messages.
- Should the FAA wait for ERAM rollout or can something be done earlier?
- What's the cost of letting Europe and others set the standards for data link implementation?
- Would the FAA consider operating its own Mode-2 network?
- Different business models may have significant impact on expected costs of communication services.
- How does a data link strategy fit into an overall communications strategy?
- Is the problem one of political perception?
- Will ERAM support data link? It's an early update, not core capability.
- Anything done prior to ERAM has to have no impact on initial ERAM.
- How to enable data link in other domains such as terminal airspace?
- Do you need a new link to do terminal data link or are there early implementation opportunities?
- How can infrastructure to do tailored arrivals be leveraged to do tailored departures?
- What are the right conditions needed to offer a trials program like TAP?
- Other resources than funding may be the limiting factor; such as time.
- How to balance across communications, navigation, and ATM functionality.

What can we do with what we have?

- The ability to increase capacity at major terminals is limited by voice congestion.
- There is a significant safety benefit to off loading non-time critical communications.
- Could use the voice switching HMI to provide data link capabilities.
- How can applications, networks and sub-networks be handled separately.
- Need to be aware that a capability can help on some hazards but may introduce new ones.
- What is the benefit of DDTC as implemented with NWA at Detroit?
 - Saves 1.7 minutes on pushback at per flight IAD.
 - Will save 2 minutes at DTW with ASDE-X.
 - Major airline at airport needs to push the capability.
 - Airlines pay for it since they see the value.
- Are there opportunities to have common applications to minimize software development costs?
- There are commercial products available that provide generic data link capabilities.
- How can data link be made a commodity rather than a developmental item?

Scope

- Need to address applications and technologies
- What applications are welcomed by controllers (and what won't be welcomed)

What are the future data link needs?

- Where do we want data link to end up?
- Will the future be determined by government or private concerns?
- Weather to cockpit will be commercial.
- For high integrity applications like wind shear alerts, may be government.
- What are the security requirements, can they be met through commercial means?
- What's the certification on the avionics?
- How to provide air-to-air communications to support functions like wake vortex information? Or, exchange between a leader and follower for roll rate to manage blunder risk.
- How do we gather and integrate the requirements from a range of sources, e.g., weather, video, security.
- Does the link include surveillance information?
- How do we focus on performance requirements rather than equipment-based requirements?
- Need to have a consistent and convincing story for the WRC to protect aviation spectrum.
- How do you build a business model around throw-away software and hardware?

How do we transition from today to the future?

- A-380 will be flying in 2050, how will it be supported?
- How do we manage information flow so as to minimize information overload for humans?
- How to maintain situational awareness to manage non-nominal conditions?
- Need to manage what needs to be managed by humans and what can be handled by machines.
- Need money to get there from here; tombstone engineering.
- Need to relate ATC delay to GNP impact.
- What is the tipping point that gets the process started?
- How can ATC communications share cost base with APC such as a broadband link?
- How to manage the program interdependencies?
- Too much complexity makes data link too hard to deliver.
- How to get tangible experience with data link in the domestic environment?
- How to factor in the IP transition that is occurring in telecommunications?
- How is RCP defined and applied?
- What is the capacity and frequency requirement?